

Species

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Additions to the avifauna of Todgarh-Raoli Wildlife Sanctuary, Rajasthan

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ABSTRACT

Conservation of species in a specific habitat and landscape including protected areas begins with a better understanding of the species available within their geographical stretch. The knowledge on species richness of any area enhances understanding of the distribution of species and their habitat preferences, hence bridging research gaps in geographical occurrences of species. Earlier 142 species were recorded in pioneering study while 9 species were added to the checklist by various published literatures. This article presents an addition of Twenty-Two species to the avian diversity of the Todgarh-Raoli Wildlife Sanctuary (T-RWLS), Rajasthan.

Keywords: Avifauna, Forest, Aravalli, Todgarh-Raoli, Rajasthan.

1. INTRODUCTION

Todgarh-Raoli Wildlife Sanctuary is situated in the Aravalli hill ranges of Rajasthan, India covering an area of about 495 km² (Koli, 2014). The habitat in sanctuary is dominated by tropical dry deciduous forest (Champion and Seth, 1968). This habitat provides home to wide range of fauna by forming an ecotone between hilly forests of Aravallis, Semi-arid and arid biogeographic zone in Rajasthan (Purohit et al., 2020a). Birds represent almost all the functional groups in ecosystem that help in all ecological processes and indicates state and health of the environment (Zöckler, 2005). To understand the structure of ecosystems and communities the information on species diversity and distribution are important (Boulinier et al., 1998). This communication reports the addition of twenty-two species to the checklist of the Todgarh-Raoli Wildlife Sanctuary, in context to previous published literature on avifauna of the sanctuary.

2. METHODS

The observations were recorded from the year 2017 to 2024 in the track of Dudhaleshwar temple in Todgarh-Raoli Wildlife Sanctuary. Observations of

species were made by opportunistic sampling based on chance encounters during travels through the track of 8km (Figure 1).

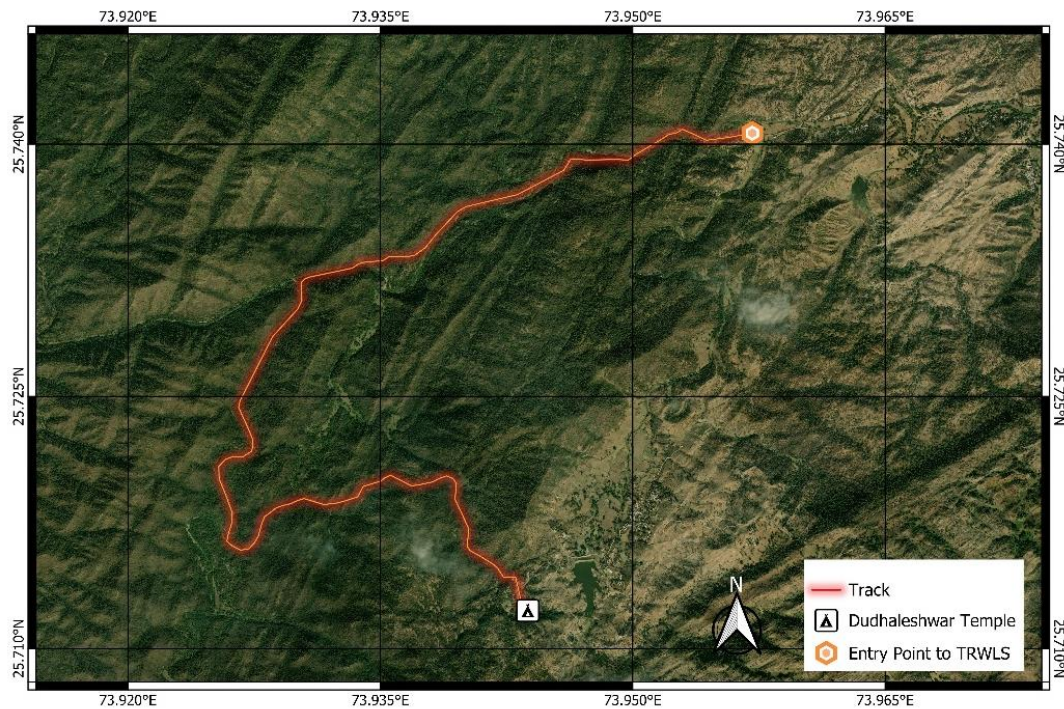


Figure 1 Track of observation from entry point to dudhaleshwar temple in T-RWLS.

The observations were made primarily by visual and auditory identification of bird species encountered on 20mt both side of the track and were confirmed using field guides (Kazmierczak and Perlo, 2000; Grimmett et al., 2011). The terrain features pronounced undulations by Aravalli hills covered with deciduous trees on both side of the track with numerous ditches of water and seasonal streams (Figure 2). Data collection involved recording the species observed, along with any notable behaviors or ecological context, we used Nikon Coolpix P1000 and Nikon D5300 for photographing the observed species.



Figure 2 Forest cover in T-RWLS and (B) Track.

3. OBSERVATION AND DISCUSSION

In the following list, are additions to Todgarh-Raoli Wildlife Sanctuary avian diversity. The present report provides an addition of 22 species of 12 families to the avian diversity of Todgarh-Raoli Wildlife Sanctuary, Rajasthan. As per IUCN assessment, one species (*Psittacula eupatria*) belongs to Near Threatened (NT) and rest species belong to Least Concern (LC) category but the population trend of 8 species is 'Decreasing', 3 is 'Unknown' and rest are 'Stable' (Table 1). Almost all observed species are either forest dwelling birds or present in inland waterbodies of the sanctuary. According to eBird reports, the nearest observations of the species from the sanctuary ranges from 45 to 130 km (Table 2).

Table 1 Checklist of species added to avifauna of T-RWLS

S.NO	FAMILY	COMMON NAME	SCIENTIFIC NAME	FIRST OBSERVATION MONTH AND YEAR	NOTE	POPULATION TREND (IUCN)
1	Accipitridae	Bonelli's Eagle	<i>Aquila fasciata</i>	December, 2020	Two individuals soaring	Decreasing
2	Accipitridae	Booted Eagle	<i>Hieraaetus pennatus</i>	March, 2024	One Individual soaring	Stable
3	Accipitridae	Oriental Honey Buzzard	<i>Pernis ptilorhynchus</i>	February, 2024	One Individual feeding on honeybee hive in a <i>Ficus religiosa</i> tree, was spotted by tracing the alarm call of Large grey babblers.	Decreasing
4	Anatidae	Red-crested Pochard	<i>Netta rufina</i>	February, 2024	One female recorded in the waterbody at the entry of TR-WLS.	Unknown
5	Ardeidae	Black Bittern	<i>Ixobrychus flavicollis</i>	March, 2022	One individual roosted near water body	Decreasing
6	Ardeidae	Yellow Bittern	<i>Ixobrychus sinensis</i>	February, 2021	One individual roosted near water body	Unknown
7	Campephagidae	Large Cuckooshrike	<i>Coracina macei</i>	September, 2023	One individual perched in a tree.	Decreasing
8	Emberizidae	Grey-necked Bunting	<i>Emberiza buchanani</i>	May, 2017	Five to eight individuals foraging in rocky terrain of T-RWLS	Stable
9	Emberizidae	Striolated Bunting	<i>Emberiza striolata</i>	October, 2023	Three to five individual were recorded foraging in a mix species flock.	Increasing
10	Emberizidae	White-capped Bunting	<i>Emberiza stewarti</i>	January, 2021	Three individuals were recorded while drinking water from seasonal streams, later in October 2023 six to ten individuals were recorded in mix flock with striolated	Stable

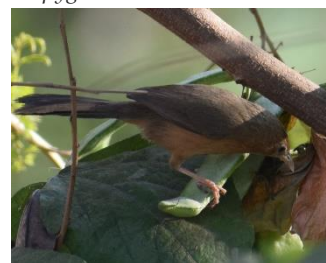
					buntings.	
11	Muscicapidae	Asian Brown Flycatcher	<i>Muscicapa dauurica</i>	August, 2023	One individual, Roosting in closed canopy of <i>Ziziphus mauritiana</i> .	Stable
12	Muscicapidae	Blue Rock-Thrush	<i>Monticola solitarius</i>	March, 2018	One individual behind the dudhaleshwar Mahadev temple	Stable
13	Muscicapidae	Verditer Flycatcher	<i>Eumyias thalassinus</i>	May, 2017	One individual was recorded while feeding.	Stable
14	Paradoxornithidae	Yellow-eyed Babbler	<i>Chrysomma sinense</i>	December, 2023	Fifteen to twenty individuals foraging in scrubs were recorded.	Stable
15	Phasianidae	Gray Junglefowl	<i>Gallus sonneratii</i>	February, 2024	Sighted a flock of six to nine individuals with three male and rest females foraging alongside the track under scrubs and buses	Decreasing
16	Phasianidae	Jungle Bush-Quail	<i>Perdica asiatica</i>	February, 2024	Approx six individuals crossing track were recorded. One female was photographed.	Stable
17	Picidae	Brown-capped pygmy woodpecker	<i>Yungipicus nanus</i>	February, 2024	One individual observed feeding in the canopy of <i>Ficus benghalensis</i> at the end point of the track.	Increasing
18	Picidae	Eurasian Wryneck	<i>Jynx torquilla</i>	December, 2023	One individual continuously calling and feeding in closed canopy.	Decreasing
19	Picidae	Streak-throated Woodpecker	<i>Picus xanthopygaeus</i>	February, 2024	Three to five individuals foraging in barks of <i>Acacia catechu</i> female was recorded in photos and videos.	Unknown
20	Psittaculidae	Alexandrine parakeet	<i>Psittacula eupatria</i>	March, 2023	One pair was spotted on <i>Syzygium cumini</i> tree by regular call.	Decreasing
21	Turdidae	Indian Blackbird	<i>Turdus simillimus</i>	February, 2024	One Female, foraging near water stream passing through <i>Vitax spp</i> shrubs	Stable
22	Timaliidae	Tawny-bellied Babbler	<i>Dumetia hypertyra</i>	January, 2023	Three to six individuals foraging in shrub	Decreasing

In the pioneering studies conducted on the avifauna of Todgarh-Raoli Wildlife Sanctuary and its surrounding areas, Koli, (2014) documented a total of 142 bird species, representing 45 families. Subsequent addition by Sharma et al., (2015) noted the sighting of the White-naped Woodpecker (*Chrysocolaptes festivus*). Purohit et al., (2020a) reported the presence of the Indian Pied Starling (*Gracupica contra*). Purohit et al., (2020b) added the White-breasted Waterhen (*Amaurornis phoenicurus*) and the Sarus Crane (*Antigone antigone*). Purohit et al., (2020c) added three Accipitridae species viz., Short-toed snake eagle (*Circaetus gallicus*), Changeable hawk-eagle (*Nisaetus cirrhatus*) and Crested serpent eagle (*Spilornis cheela*), Purohit et al., (2024) listed Great White Pelican (*Pelecanus onocrotalus*) and Eurasian Spoonbill (*Platalea leucorodia*) as new additions to the avifaunal checklist of the sanctuary.

Studies have further shown that diversity of specialized forest birds are influenced by the availability of essential habitat structures such as mature trees Poulsen, (2002) and microhabitats (Remm et al., 2006). In outcome, the sanctuary provides valuable habitat for a wide variety of forest birds. More extensive field investigations and research into ecological studies are required to develop effective conservation frameworks. Regular bird population observation is a useful tool for assessing ecosystem health and promoting long-term habitat restoration.

Table 2 Photographs of recorded bird species

			
1) <i>Aquila fasciata</i>	2) <i>Hieraetus pennatus</i>	3) <i>Pernis ptilorhynchus</i>	4) <i>Netta rufina</i>
			
5) <i>Ixobrychus flavicollis</i>	6) <i>Ixobrychus sinensis</i>	7) <i>Coracina macei</i>	8) <i>Emberiza buchanani</i>
			
9) <i>Emberiza striolata</i>	10) <i>Emberiza stewarti</i>	11) <i>Muscicapa dauurica</i>	12) <i>Monticola solitarius</i>
			
13) <i>Eumyias thalassinus</i>	14) <i>Chrysomma sinense</i>	15) <i>Gallus sonneratii</i>	16) <i>Perdicula asiatica</i>

17) *Yungipicus nanus*18) *Jynx torquilla*19) *Picus xanthopygaeus*20) *Psittacula eupatria*21) *Turdus simillimus*22) *Dumetia hyperythra*

Author's Contribution

Rounak Choudhary, Vivek Sharma: Data Collection, Investigation, Writing-Original Draft

Mriganka Upadhyay: Data Collection, Writing-Review and Editing

Subroto Dutta: Supervision and Resources

Praveen Mathur: Validation

Harish Sahu, Dipesh Kumar Jangir: Data Collection

Conflicts of interests:

The authors declare that there are no conflicts of interests.

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Ethical approval

The ethical guidelines for animals are followed in the study for species collection & identification.

Data and materials availability

All data associated with this study are present in the paper.

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